The equipment used by the ILECs in their networks is also changing. ILECs are deploying more and more "next generation" equipment that provides greater functionality in more compact components. This ILEC deployment of NGDLC affects one portion of the network in particular, the local loop. Many competitors, including Rhythms, depend on access to the local loop to provision their own facilities-based services. Indeed, both Congress and the Commission have recognized this dependence by making the local loop, as well as its subloop portions, network elements that the ILECs must unbundle for the CLECs.[272] The Commission must reiterate the ILECs duties to fulfill these unbundling obligations even when NGDLC is deployed.

A. ILEC Networks Can *and Should* Evolve To Meet Consumers Demand

Evolution is necessary. Since the enactment of the 1996 Act, burgeoning advanced services, such as DSL, have demonstrated to consumers that high-speed data transmission is essential in both their personal and professional lives. Moreover, consumers have sought the convergence of different types of telecommunications services. To meet this soaring consumer demand, ILECs and CLECs alike have worked with equipment manufacturers and vendors to develop network equipment that increases the functionality, performance, capacity and serviceability of equipment used in the provision of advanced services.[273]

Innovation is beneficial. Properly implemented in an open and interoperable manner, ubiquitous deployment of next generation DLC systems in the loop network will allow advanced services providers to extend the reach of DSL services at higher speeds to significantly more consumers—particularly those located far from the central offices, served by long loops that

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[272] *UNE Remand Order* ¶¶ 163-230; *see also* 47 U.S.C. § 271(c)(2)(B)(iv).

were unsuitable for DSL using older technologies.[274] xDSL technologies are distance-sensitive; thus the strength and quality of the DSL signal over a copper facility—and therefore the speed—decreases as it travels further from its origin.[275] By placing NGDLC equipment at remote terminals, the DSL signal is generated at the remote terminal, as opposed to the central office.[276] Because in a remote terminal architecture the length of the copper portion of the loop drastically decreases, the performance to the end user increases.[277] Thus, the ubiquitous deployment of NGDLC equipment should make better DSL services available at higher speeds and to many more consumers.[278] This is the future envisioned by competitors.

But this is not the future the ILECs foresee. ILECs have designed their new loop network architecture to strategically favor themselves and their advanced services affiliates, while claiming the right to sidestep their Section 251 obligations. Each of the ILECs plans to spend billions of dollars to incorporate the next generation of DLC systems into their loop networks.[279] In planning the deployment of NGDLC in their networks, the ILECs took their own advanced services business needs into consideration, ignoring any joint planning or cooperating

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[273] *See* Joint Declaration ¶¶ 14, 56.

[274] Joint Declaration ¶¶ 5, 76, 81-83, 88, 94, 111-112.

[275] Joint Declaration ¶ 85.

[276] Joint Declaration ¶ 85.

[277] Joint Declaration ¶ 83.

[278] Joint Declaration ¶¶ 81-96.

[279] *See* Joint Declaration ¶¶ 54, 84.

with competing carriers. Then they announced that these network changes would allow them to reach an otherwise unserved customer base with DSL-based advanced services.[280]

The Commission has noted that "[b]ecause SBC is focused on its own business needs and target markets, it has little incentive to cooperate with competing carriers that wish to pursue different approaches and may decide against implementing certain capabilities of the equipment."[281] ILECs have every incentive to forestall inroads into their monopoly markets and to retain as much market share as possible. Indeed, several ILECs have specifically expedited their NGDLC plans, including working with manufacturers to develop a loop architecture that precludes competitors from offering innovative services and could allow them to reacquire sole control over the bottleneck loop architecture.

Despite the ILECs' efforts, the CLECs, as well as numerous equipment manufacturers, described the means to retain facilities-based competition in the advanced services market, through such mechanisms as remote terminal collocation and line cards, as explained in II.B. and III.E. In turn, at least one ILEC—SBC—has responded with an overly restrictive resale product offering—Project Pronto—that fails to reflect adherence to Section 251 of the 1996 Act.[282] Other ILECs, as elaborated further in IV.D., simply decline to perform the statutory and

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[280] SBC Project Pronto Announcement at 4; DLC Forum, Tr. 18; *Bell Atlantic Deploys Fiber Optics, Electronics, Bringing Additional Advanced Technology, Services to Beaver County*, <http://newscenter.verizon.com/proactive/ newsroom/release.vtml?id=35810> (June 23, 2000); *Bell Atlantic Deploys Fiber Optics, Electronics, Bringing Additional Advanced Technology, Services to Westmoreland County*, <http://newscenter.verizon.com/proactive/ newsroom/release.vtml?id=37409> (Mar. 7, 2000); *Bell Atlantic Deploys Fiber Optics, Electronics, Bringing Additional Advanced Technology, Services to Southern Chester County*, <http://newscenter.verizon.com/proactive/newsroom/release.vtml?id=37399> (Mar. 3, 2000); *Bell Atlantic Deploys Fiber Optics, Electronics, Bringing Additional Advanced Technology, Services to Washington County*, <http://newscenter.verizon.com/proactive/newsroom/ release.vtml?id=35810> (Dec. 10, 1999).

[281] *In re Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from Ameritech Corporation, Transferor, to SBC Communications, Inc., Transferee*, CC Docket No. 98-141, Second Memorandum and Order, FCC 00-336 (rel. Sep.8, 2000)("*Project Pronto Order*") ¶ 41.

[282] *SBC Announces Sweeping Broadband Initiative*, Investor Briefing No. 211 (Oct. 18, 1999) at 1 ("*SBC Project Pronto Announcement*").

regulatory obligations, in effect refusing to provide competitors with the local loop in its entirety, stranding facilities-based competitors, and their customers, at the remote terminal.

The Commission must now choose to implement one of these strarkly contrasting visions. Either the Commission can permit the ILECs to remonopolize the local infrastructure, relegating CLECs to mere resellers, or the Commission can force the ILECs to embrace facilities-based competition through open and cooperative network design and planning and full enforcement of the unbundling, interconnection and collocation obligations. The only way to counteract the incentive that the ILECs have to limit customer choice by providing only the most limited and discriminatory access to their loop network, is for the Commission to continue to enforce the 1996 Act in the new architecture. In this proceeding, the Commission must ensure that the evolution of the loop network properly contemplates and accommodates facilities-based competition, rather than precluding such competition.

B. To Ensure Continued Access to the Local Loop, ILECs Have a Statutory Obligation to Coordinate with CLECs in the Planning, Design and Implementation of the Loop Network

Section 256 of the Act clearly states that:

> It is the purpose of this Section (1) to promote nondiscriminatory accessibility by the broadest number of users and vendors of communications products and services to public telecommunications networks used to provide telecommunications service through (A) coordinated public telecommunications network planning and design by telecommunications carriers and other providers of telecommunications service; and (B) public telecommunications network interconnectivity, and interconnectivity of devices with such networks used to provide telecommunications service.[283]

Openness and interoperability lie at the heart of this statutory requirement. To advance the coordination of interconnectivity, Congress also charged the Commission with responsibility to

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[283] 46 U.S.C. § 256(a).

oversee this coordination of network planning and to participate in appropriate industry standards-setting organizations that promote "the effective and efficient interconnection of public telecommunications networks."[284] Nowhere has the necessity for this oversight been more apparent than in ILEC implementation of NGDLC network architecture.

It is clear that the ILECs must not only contemplate the needs of competitors in the midst of planning any changes to the network, the ILECs must accommodate those needs. In determining the appropriate configuration for the NGDLC local loop network, the ILECs declined to seek competitors' input on the redesigning of the infrastructure, and ignored that competitors may prefer a different configuration of the loop plant infrastructure. Some ILECs made a unilateral decision *not* to take competition into consideration when redesigning the loop plant infrastructure.[285] Without CLEC input and Commission oversight in the network planning and design of the loop network served over NGDLC, the ILECs' networks will revert to being discriminatory, closed and inaccessible. The ILEC subsidiary *de facto* receives precisely the type and kind of interconnection, unbundling and collocation it requires because the ILEC policies specifically contemplated and accommodated the service offerings the subsidiaries provide. To avoid discrimination, the same consideration and accommodation must be available to competitors in the network architecture to ensure the continued success of facilities-based competition.

Rather than adhere to principles of openness and interoperability, ILECs are deploying NGDLC without consulting, notifying or accommodating CLECs. SBC provides the case in point. SBC announced Project Pronto publicly in October 1999 complete with a detailed and

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[284] 47 U.S.C. § 256(b).

[285] Project Pronto Product Overview, Tr. at 91 (Mar. 1, 2000).

expansive schedule for network implementation.[286] The planning interval for such an expansive and expensive undertaking was sufficient to have included industry input. Indeed, SBC has acknowledged that it had been working on the project for more than four years. Yet, the plan utterly fails to account for its obligation to unbundle the network, an obligation of which SBC was aware throughout the planning horizon. Indeed, just the opposite appears to be the case; SBC has intentionally orchestrated a network change in conjunction with its vendors and manufacturers, that it believes precludes facilities-based competition.[287] The Commission must disabuse SBC, and other ILECs, of this notion. By the time CLECs became aware of these drastic and fundamental network changes, through regular news channels, SBC's plans were set in stone.[288] To date, SBC has only provided the barest information on where, when and how Project Pronto will be implemented across its vast region.[289]

Even more frustrating is SBC's insistence that the creation of its advanced services subsidiary dispels any taint of discrimination.[290] Unlike CLECs, the affiliate services were specifically contemplated and accommodated by SBC in the planning process. For instance, the NGDLC equipment manufacturer was asked to and did develop a line card for the ADSL service that SBC—and now its affiliate—provides.[291] Yet, because SBC only intended to provide consumer grade services, the manufacturer was not asked to develop cards that provided for business quality services (e.g. VBR), or for other xDSL flavors or to design its equipment to

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[286] *SBC Project Pronto Announcement*

[287] *SBC February 15 Letter.*

[288] Joint Declaration ¶¶ 104-105, 108-110.

[289] Joint Declaration ¶ 109.

[290] Reply Comments of SBC Communications on Application for Consent to Transfer of Control of Licenses and Section 214 Control of Licenses and Section 214 Authorizations from Ameritech Corporation Transferor to SBC Inc. Transferee, CC Docket No. 98-141 (March 10, 2000) at 18-20.

[291] Joint Declaration ¶¶ 57, 83-84, 87, 108-109.

accommodate the cards of other vendors' xDSL offerings.[292] In addition, the DLC equipment being deployed by SBC does not include capabilities for a multi-port backplane that would allow competitors to create and manage their own Permanent Virtual Path back to the competitors' equipment, either in the central office or at the CLECs' POP.[293] These deficiencies in SBC's deployment plainly violate the purpose and obligations of the 1996 act and fail to contemplate or accommodate competition and should not be permitted.

CLECs have repeatedly expressed concerns about the technical and operational parameters of the NGDLC configurations being implemented by the ILECs, as have commissions at both the state and federal levels.[294] For example, in response to numerous concerns raised about SBC's "Broadband Service" offering, the Commission held a public forum on Competitive Access to Next-Generation Remote Terminals followed by the initiation of this proposed rulemaking.[295] SBC admits that its deployment of the "Broadband Service" offering "will provide the pro-competitive benefit of eliminating the need for carriers to deploy their own equipment at SBC's remote terminals."[296] ILECs are aware of CLECs' needs and know that it is technically feasible to accommodate competition over the NGDLC loop infrastructure.[297] Yet they resist.

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[292] Joint Declaration ¶¶ 108-109.

[293] Joint Declaration ¶ 109.

[294] *Line Sharing Order* ¶ 92; DATA Comments at 10; *NY PSC Line Sharing Press Release* at 2; *Maryland Line Sharing Order* at 143-15.

[295] *5th NPRM.*

[296] Letter from SBC Communications, Inc., to Lawrence E. Strickling, Chief of Common Carrier Bureau, Federal Communications Commission at 2 (July 13, 2000)("SBC Voluntary Commitments").

[297] Project Pronto Product Overview, Tr. at 91 (Mar. 1, 2000). SBC intentionally disregarded and overlooked the needs of competitors.

Pursuant to the direct mandate and authority under Section 256, the Commission can and must intervene to ensure that ILECs, vendors and manufacturers adhere to strict principles of openness and interoperability. The Commission must require ILECs to coordinate with competitors under the strict supervision of the Commission in the design of the next generation loop architecture to ensure the continuance of facilities-based competition.

C. ILECs Should Be Required to Fully Comply with Existing UNE Rules, Including Unbundling of the NGDLC Loop Architecture

Anticipating ILEC resistance in unbundling the NGDLC loop network, the Commission established comprehensive rules to direct the ILECs as to their obligations with respect to unbundling on a just, reasonable and nondiscriminatory basis. In the *Local Competition Order*, the Commission explicitly defined the local loop in such a way as "to ensure that the loop definition will *apply to new as well as current technologies*, and to ensure that competitors will continue to be able to access loops as an unbundled network element as long as that access is required."[298] Indeed, the Commission specifically required ILECs to unbundle DLC loops, stating "[i]t was 'technically feasible' to unbundle loops that pass through an integrated DLC or similar remote concentration devices, and required incumbent LECs to unbundle such loops to competitive LECs."[299] Rhythms commends the Commission on its past efforts and urges the Commission to prevent the ILECs from unilaterally undoing the regulatory framework for unbundling by merely redefining the elements of the network.

As the ILECs deploy more NGDLC, they are simultaneously, and unilaterally, redefining the UNEs and the obligations by which they must provision those UNEs to the CLECs. For instance, certain ILECs have redefined an "unbundled loop" in the NGDLC architecture to mean

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[298] *UNE Remand Order* ¶ 167. emphasis added; 47 C.F.R. § 51.319(a)(1).

a facility between the customer premises and the remote terminal in contrast to the Commission's rules defining an unbundled loop as a facility between the central office's MDF and the customer NID or MPOE.[300] However, the ILECs insist that the fiber feeder from the remote terminal to the central office is not a UNE and refuse to provide it to data CLECs. Reiteration that the ILEC's unbundling duties apply in an NGDLC network architecture—including the requirements relating to loops, interoffice transport, subloops, spare copper, OSS, and packet switching—should remedy any discrepancy between the carriers' interpretations of the Commission's definitions.

In particular, CLECs must have access to the entire loop as well as all subloop elements at any technically feasible point. Rhythms, therefore, urges that the Commission restate that the existing UNEs, as defined in the rules, apply in the NGDLC loop network, and that the Commission take this opportunity to clarify some points of contention with relation to those definitions. Most importantly, the Commission should declare that all technically feasible options, as detailed below, be made available to foster facilities-based competition by allowing the competitors to choose the network elements and their features, functions and capabilities that best support the services that the competitor intends to offer.

1. CLECs Must Continue To Have Nondiscriminatory Access To Local Loops

The Commission has repeatedly emphasized the importance of unbundled local loops, because "[w]ithout access to loops, competitors would be at a significant disadvantage, and the incumbent LEC, rather than the marketplace, would dictate the pace of the deployment of

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[299] *Advanced Services Memorandum Opinion and Order* ¶ 54, *citing Local Competition Order* ¶ 383.

[300] SBC interprets the *UNE Remand Order* to only allow the CLEC to order the subloop portion from the customer premises to the service area interface (SAI) on a nondiscriminatory basis. *See* Attachment 3, SBC's Broadband Service Product Overview, Diagram 1 (June 15, 2000).

advanced services."[301] Additionally, the Commission noted that "[t]o promote the deployment of advanced telecommunications capabilities to all Americans, competitors must be able to obtain access to ILEC xDSL-capable loops on an unbundled and nondiscriminatory basis."[302] Rhythms, therefore, urges the Commission to reiterate that all CLECs, regardless of the technologies or services they plan to deploy on the loop, are entitled to obtain the complete unbundled local loop, including all of the features, functions and capabilities of those loops, as defined by this Commission's rules.

The Commission rules define a local loop as follows:

> A transmission facility between a distribution frame (or its equivalent) in an incumbent LEC central office and the loop demarcation point at an end-user customer premises, including inside wire owned by the incumbent LEC. The local loop network element includes all features, functions, and capabilities of such transmission facility. Those features, functions, and capabilities include, but are not limited to, dark fiber, attached electronics (except those electronics used for the provision of advanced services, such as Digital Subscriber Line Access Multiplexers), and line conditioning. The local loop includes, but is not limited to, DS1, DS3, fiber, and other high capacity loops.[303]

It is clear from this definition that the ILECs must unbundle the local loop as a single facility from the central office to the end user. There in nothing in the definition to suggest that this is not the case if the loop is provided over DLC, where the loop consists of the fiber and/or copper feeder cable, the DLC electronics, and the copper distribution pair.[304]

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[301] *UNE Remand Order* ¶ 190. Additionally, the Commission has noted that "preventing access to unbundled loops would either discourage a potential competitor from entering the market in that area, thereby denying those consumers the benefits of competition." *Local Competition Order* ¶ 378.

[302] *Advanced Services Memorandum Opinion and Order* ¶ 52.

[303] *UNE Remand Order* ¶¶ 162-201; *Local Competition Order* ¶ 380; 47 C.F.R. § 51.319(a)(1).

[304] *See UNE Remand Order* ¶ 202.

a. Facilities-Based Competition Requires Access To the Local Loop in its Entirety

ILECs must make available the local loop in its entirety as a single UNE, even when the loop traverses the NGDLC loop network,[305] and even where a competitor places electronics in an remote terminal. Not only does the entire transmission facility between the central office and the end user remain a loop in the NGDLC network, the Commission has acknowledged that loops served over digital loop carrier can and should be unbundled as a single UNE.[306] "[T]he incumbent LECs' obligation to provide requesting carriers with fully functional conditioned loops extends to loops provisioned through remote concentration devices such as digital loop carriers (DLC)."[307]

If a voice carrier seeks to obtain an unbundled loop, that entire loop (from the customer premises to the main distribution frame in the central office) is provided to the voice carrier as a single UNE, as defined in the rules, regardless of whether the loop is all copper, or copper and fiber through a DLC. It is highly discriminatory to refuse to provide this same loop as a single UNE to a data CLEC that intends to use the loop to provision DSL-based services. Likewise, just as the rules entitle a voice CLEC to use all the features, functions and capabilities of the loop, so to may the data CLEC use the features, functions and capabilities of the loop. Finally, any CLEC that acquires an unbundled loop obtains the right to control that loop and use the loop consistent with the CLECs' service over that loop.

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[305] The electronics in the DLC serve several functions, such as converting the data or voice transmission from a fiber-based to a copper-based signal and cross connecting the fiber and copper portions of the loop. Joint Declaration ¶ 111.

[306] *Advanced Services Memorandum Opinion and Order* ¶ 54, *citing Local Competition Order* ¶ 383.

[307] *Advanced Services Memorandum Opinion and Order* ¶ 54.

Nevertheless, some ILECs have refused to provide data CLECs with the entire loop when that loop is served over NGDLC. ILECs advance two theories for this refusal, neither of which withstands scrutiny. Verizon has taken the position that when a carrier uses an NGDLC loop to provision DSL services, the fiber portion of the local loop becomes "packet-switching" that Verizon is not required to unbundle at all.[308] Nothing about the type of service offered over the loop morphs that loop into anything but a loop. As Rhythms explains, "[w]hen the fiber portion of the loop is used for DSL service, it does not become a packet switching facility, instead it remains the same local loop as used to provide any other type of voice or data service."[309] The practical result of Verizon's approach is that the ILEC strands the CLEC at the remote terminal, refusing to transmit the traffic back to the collocation arrangement at the central office.[310] The Commission should clarify that the exemption from unbundling packet switching applies to the DSLAM equipment.

Some ILECs contend that the fiber portion of the loop constitutes "interoffice transport", which will be provisioned as either dedicated transport or dark fiber.[311] The fundamental and faulty premise underlying this assertion is the absurd assumption that the remote terminal is a central office. This assertion is also flatly inconsistent with the ILECs' cost studies submitted in Section 251 litigation under the Act, as well as in alternative regulation/price cap litigation prior to 1996; in all these proceedings the ILECs clearly asserted that fiber in the loops was a portion of the loop, not part of interoffice transport. The ILECs argue an absurdity in order to preclude

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[308] *See NY PSC Line Sharing Press Release*; *Maryland Line Sharing Order*; *Illinois Line Sharing Order.*

[309] *See* Joint Declaration ¶ 93.

[310] Joint Declaration ¶ 92.

[311] Joint Declaration ¶ 104-107

CLECs from obtaining the remainder of the local loop.[312] The effect of their argument is to preclude CLECs from obtaining the fiber feeder because the Commission has defined interoffice transport as dedicated transport between wire centers owned by ILECs or carriers or between switches owned by ILECs or carriers.[313] ILECs incorrectly contend that fiber feeder meets this definition, but it is neither "dedicated" nor "transported between switches."

Alternatively, ILECs argue that CLECs can only have signals from the remote terminal to the central office by obtaining dark fiber,[314] or dark fiber transport.[315] Dark fiber is not a practical option for CLECs seeking to transmit traffic between the remote terminal and the central office. First, redefining a single loop UNE into a copper subloop UNE plus dark fiber is a fiction that only increases the price by several orders of magnitude. Second, ILEC dark fiber tariffs do not provide for access at every technically feasible point, or every remote terminal.[316] Third, in order to "light" the fiber, CLECs would need to collocate even more equipment in the space constrained remote terminals.[317] The fiber portion of the local loop is obviously not dedicated transport as it does not connect two wire centers or two switches. Instead the Commission has recognized dark fiber as a feature, function or capability of a local loop.[318]

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[312] Joint Declaration ¶ 104-105.

[313] 47 C.F.R. § 319(d).

[314] *UNE Remand Order* ¶¶ 162-201; 47 C.F.R. § 51.319(a)(1). The Commission defines dark fiber as the feature, function or capability of a local loop. *UNE Remand Order* ¶ 174. Moreover, the Commission noted the distinction between interoffice dark fiber transport and the dark fiber part of the loop. *UNE Remand Order* ¶ 198.

[315] 47 C.F.R. § 51.319(d)(1)(B). The Commission defines dark fiber transport as ILEC optical transmission facilities without attached multiplexing, aggregation or other electronics. *Id.*

[316] Joint Declaration ¶ 106.

[317] Joint Declaration ¶ 107.

[318] *UNE Remand Order* ¶¶ 162-201; 47 C.F.R. § 51.319(a)(1). Moreover, the Commission noted the distinction between interoffice dark fiber transport and the dark fiber part of the loop. *UNE Remand Order* ¶ 198.

The ILEC's positions are flatly inconsistent with ILECs unbundling of the local loop served over any other DLC systems. In other words, the ILECs have not refused to offer the fiber portion of the loop as an integral part of a single UNE to competitors purchasing unbundled loops served over other DLC systems, nor have the ILECs attempted to redefine the copper feeder or coaxial cable deployed in the feeder plant as transport.[319] By clarifying that all CLECs are entitled to the entire loop, the Commission will obviate further disagreement on this issues.

b. Unbundling the Local Loop Must Include Nondiscriminatory Access to All its Features, Functions and Capabilities

The ILECs must also provide CLECs nondiscriminatory access to all of the features, functions and capabilities of the local loop in the NGDLC network. As CLECs have different networks and provide various services, they need access not only to the local loop, but also the various features, functions and capabilities of the local loop.[320] For example, collocating DLC line cards in the NGDLC chassis makes it possible for CLECs to offer alternative parameters of their DSL service, as explained previously in II.B., allowing them to distinguish their service from that of other DSL and advanced services providers.[321] To do so efficiently and effectively, however, CLEC must have access to the loop's features, functions and capabilities.[322] For this reason, in ordering an ILEC local loop, competitors must be able to designate the features, functions and capabilities specific to each portion of the loop that are necessary for allowing the carrier to provide the services it seeks to offer. Their ability to do so fosters rigorous competition and innovation that will bring a variety of service alternatives to consumers.

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[319] Joint Declaration ¶ 90.

[320] Joint Declaration ¶ 93-96.

[321] Placing DLC line cards in the NGDLC chassis makes it possible for CLECs to offer alternative parameters of their DSL service, as explained previously in II.B., allowing them to distinguish their service from that of other DSL and advanced services providers.

c. ILECs Must Make Crucial OSS Systems Available for NGDLC Loops

The Commission should also reiterate the ILEC obligation to provide real-time electronic access to loop data, including "such information exists anywhere within the incumbent's back office and can be accessed by any of the incumbent LEC's personnel,"[323] without digesting or filtering any of the information before providing the CLECs access.[324] Consistent with the *UNE Remand Order*, CLECs must have access to (1) actual loop length; (2) gauge of the loop at each length; (3) presence of repeaters, load coils, or bridged taps; (4) approximate location of each of these devices; (5) presence, location and number of pair gain devices, such as DLC and DAMLs; and (6) the presence of disturbing technologies placed near to the particular loop.[325] CLECs also require data on the length of the copper portion of the loop as well.[326] ILECs should also be required to indicate for each loop served over the NGDLC loop network whether parallel spare copper exists.

An OSS function that is necessary for access to the features, functions and capabilities of an NGDLC loop is the underlying end-to-end loop management for the fiber portion of the loop. As Rhythms explained, "[t]o provide the DSL services as intended, Rhythms would only require access to the same OSS functionalities that the ILECs can access."[327] The NGDLC equipment will allow ILECs to remotely monitor and upgrade the functionality of the loop.[328] Rhythms

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[322] Joint Declaration ¶¶ 58-59, 95, 1116-1118.

[323] *UNE Remand Order* ¶ 430.

[324] *UNE Remand Order* ¶ 428.

[325] *UNE Remand Order* ¶ 429. *See also* Joint Declaration ¶ 59.

[326] The electronics in the DLC serve several functions, such as converting the data or voice transmission from a fiber-based to a copper-based signal and cross connecting the fiber and copper portions of the loop.

[327] Joint Declaration ¶ 116.

[328] *See* Joint Declaration ¶ 116.

must also have the ability to remotely access its leased capacity on the fiber, as well as its DLC line cards on a partitioned basis.[329] As these processes are only now being put into place, now is the time to ensure that the software is programmed in such a manner as to allow open access to the architecture by all carriers utilizing the NGDLC loop network.[330]

Even without the complete record that will be established in this rulemaking, the Commission already made the determination that CLECs should have the ability to test their loops remotely in the context of resold DSL services under Project Pronto.[331] As Rhythms has explained, CLECs need access to more than just testing functionality in the NGDLC loop network. For these reasons, Rhythms urges the Commission to explicitly apply its existing regulations on OSS with clarification that CLECs also are entitled to the additional information and access needed to provide the services they intend to offer, in the same way the ILECs perform for themselves or their affiliates.

2. CLECs Must Continue to Have Nondiscriminatory Access to Subloops

The Commission defined the subloop element as:

> (2) Subloop: The subloop network element is defined as *any portion of the loop* that is technically feasible to access at terminals in the ILEC's outside plant, including inside wire. An accessible terminal is any point on the loop where technicians can access the wire or fiber within the cable without removing a splice case to reach the wire or fiber within. Such points may include, but are not limited to, the pole or pedestal, the network interface device, the minimum point of entry, the single point of interconnection, the main distribution frame, the remote terminal, and the feeder/distribution interface.[332]

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[329] Joint Declaration ¶ 117-118.

[330] Joint Declaration ¶ 118.

[331] *Project Pronto Order* ¶ 42.

[332] 47 C.F.R. § 51.319(a)(2); *UNE Remand Order* ¶ 202.

Thus, CLECs may access any of the feeder, feeder distribution interfaces or distribution components of the loops as individual network elements,[333] accessible subject to the Commission's collocation rules.[334] Although this definition meets the unbundling needs of CLECs, ILECs have interpreted this definition to impermissibly limit their subloop unbundling obligations to the provision of copper loop distribution plant.[335]

a. The Fiber Portion of the Loop is a Subloop Element

The Commission should clarify that ILECs cannot restrict their subloop service offerings to unbundling only certain portions of the local loop when that loop is served over NGDLC. As stated in *UNE Remand*, "lack of access to the part of the incumbent's loop they need could impede competitors' ability to develop their own network architecture and provide new service offerings."[336]

Verizon and SBC refuse to provide the portions of the loop, or to unbundle as subloops loop parts necessary to prevent CLECs from being stranded at the remote terminals or SAIs.[337] For example, Verizon's *UNE Remand* implementation tariff in New York defines the only available "subloop" as metallic distribution pairs or facilities between the feeder distribution interface and the end user location,[338] but no UNE from the FDI to the central office. This ILEC implementation falls far short of the Commission's subloop unbundling requirements. First,

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[333] *UNE Remand Order* ¶ 202.

[334] 47 C.F.R. §§ 51.321-323.

[335] Joint Declaration ¶¶ 96-107.

[336] *UNE Remand Order* ¶ 215.

[337] *See* Joint Declaration ¶¶ 59-78. On certain NGDLC local loops, the fiber and copper portions of the loop do not meet at the FDI. Joint Declaration ¶ 91. The loop may consist of a fiber feeder portion that connects to a short length of copper feeder that connects to the copper distribution pair. Joint Declaration ¶ 91.

[338] *See e.g.*, New York Telephone Company, P.S.C. No. 916, original page 114, § 5.19.1.1 (filed May 17, 2000).

Verizon's focus solely on metallic facilities, runs directly afoul of the Commission's mandate to unbundle *all* technologies.[339] Second, the only facility offered is the distribution portion of the loop. CLECs are not offered—as required by Commission rules—any other subloop element, including feeder or FDI. Finally, CLECs are limited to access at a single point in the network, the feeder distribution interface rather than the Commission-mandated "any technically feasible point." Thus, it is clear that in order to avoid protracted litigation in every state, Commission action is required to specifically direct ILECs to immediately tariff fiber feeder an unbundled subloop element.

Finally, the Commission has recognized the potential for problems with the ILECs refusing to provide competitors nondiscriminatory access to the subloop portions of the local loop. To nullify these potential problems, the Commission established a best practices policy specifically for unbundled subloops to guarantee "that incumbent LECs do not limit access to subloops based on unforeseeable technological and infrastructure developments."[340] The best practices policy is that when one state determines that a particular point is technically feasible for subloop unbundling, all ILECs nationwide must provide access to the subloop at that point until the ILEC demonstrates to the appropriate state commission that it is not technically feasible, or that sufficient space is not available, to unbundle its own loops at such a point.[341]

b. CLECs Must Have Access to and Control Over the Features, Functions and Capabilities of Fiber Subloops

In establishing the parameters of the ILEC obligation to unbundle the fiber feeder of an NGDLC loop, the Commission should permit CLECs to access and control the features functions

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[339] Verizon-MA Tariff 17, Part B, Section 1.1.A.

[340] *UNE Remand Order* ¶ 227.

[341] *UNE Remand Order* ¶ 227.

and capabilities of the loop. CLEC to control the features, functions and capabilities of subloops corresponds directly with the ability of CLECs to offer innovative services to consumers, because it enables them to establish the Quality of Service (QoS) classes governing the service.[342] The carrier that defines the capacity of the fiber optics, such as Constant Bit Rate ("CBR") on a Permanent Virtual Circuit, defines the quality of service provided over the fiber facility.[343] Thus, CLECs should be able to control, or at a minimum specify, these parameters.

Section 51.309 of the Commission's rules prohibits the ILECs from imposing "*limitations, restrictions, or requirements on requests for, or use of, unbundled network elements* that would impair the ability of a requesting telecommunications carrier to offer a telecommunications service in a manner the requesting telecommunications carrier intends."[344] For the types of services that Rhythms plans to offer, the ILECs must offer the full range of features, functions and capabilities without any arbitrary restrictions on capacity or quality of service. The Joint Declaration explains that "[t]o meet the service level agreements which Rhythms provides to its own customers, Rhythms must have incrementally guaranteed bandwidth on the fiber feeder with the ability to upgrade or expand the capacity of its current path to protect its DSL customers against the ILECs oversubscribing the fiber."[345]

The ILECs, in turn, should not be able to restrict the capabilities of the fiber available to CLECs to the least amount of capacity at the lowest levels of quality of service, as has been

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[342] Joint Declaration ¶ ¶ 94-95.

[343] Joint Declaration ¶ 95.

[344] 47 C.F.R. § 51.309. emphasis added. With respect to the dark fiber in particular, the ILECs must "provide all technically feasible transmission facilities, features, functions, and capabilities that the requesting telecommunications carrier *could* use to provide telecommunications services."

[345] Joint Declaration ¶ 94.

proposed by SBC.[346] Such capacity limitations are unjustified. In fact, the Commission observed that "a shortage of fiber capacity caused by unbundling is highly unlikely."[347] Additionally, the equipment deployed in the NGDLC loop network is capable of supporting all types of qualities of service.[348] Precluding ILECs from limiting the capacity that CLECs use for transmission between the remote terminal and the central office resolves CLEC concerns regarding the availability of all levels of quality of service.

In the context of the *Project Pronto Order*, the Commission established a rebuttable standard that "all features, functions and capabilities made available by the manufacturer are technically and operationally feasible, unless persuaded otherwise."[349] Such a rebuttable presumption would be beneficial in the unbundling of all loops and subloops as well, by precluding ILECs from unilaterally determining which features, functions and capabilities should be made available.

Rhythms, therefore, urges the Commission to re-emphasize that along with unbundling the subloop elements, the ILECs must also provide access to their features, functions and capabilities, as well as establish a rebuttable presumption that all features, functions and capabilities provided by the manufacturer are technically and operationally feasible.

c. Additional Items Required for Nondiscriminatory Provisioning of Subloop Elements

The Commission should also establish rules that preclude ILECs from refusing to provide the necessary cross connects to access subloop elements and from imposing cost-prohibitive

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[346] Joint Declaration ¶ 109.

[347] *UNE Remand Order* ¶ 198.

[348] Joint Declaration ¶¶ 94-95.

[349] *Project Pronto Order* ¶ 44.

charges for the special construction arrangements.[350] As explained in III.A., cross connects are necessary for interconnection and access to UNEs. Specifically, Rhythms requests that the Commission explain that cross connects should be available at any technically feasible point in the NGDLC loop network.[351] Furthermore, the Commission should ensure that any ILEC-imposed charges for technically feasible access to subloops, including the copper distribution portion of the loop "hardwired to the RT," should be priced consistently with Section 252(d)(1).[352]

3. CLECs Must Continue to Have Nondiscriminatory Access to Spare Copper

Access to loops on spare copper is yet another option available to DSL providers once the NGDLC loop network becomes a reality. Technical issues, however, may limit the ability of CLECs to use parallel copper for ADSL.[353] For example, once an end user is placed on the new fiber architecture, a competitive provider of DSL service would be unable to serve that customer over a shared copper line from the central office, even if the ILEC maintains the copper running from the remote terminal to the central office.[354] Thus, the Commission should rule that, in upgrading their networks from copper to fiber, the ILECs cannot interfere with service offerings being made available by competing carriers. Rhythms, therefore, suggests that the Commission confirm the CLECs' right to have access to spare copper where technically feasible and require notice to CLECs of planned removals of copper plant with federal approval on any removals contested.

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[350] Joint Declaration ¶ 78-79.

[351] Joint Declaration ¶ 79.

[352] Joint Declaration ¶¶ 78-80.

[353] Joint Declaration ¶¶ 120-127.

In addition, the copper plant that parallels NGDLC loop plant may be unusable due interference from the remote terminal generated ADSL signals of ILECs or competitors.[355] The Commission has recognized that voluntary standards can assist in opening the loop architecture. Consistent with the T1E1.4 proposed standard, Rhythms proposes that the Commission prohibit the placement of DSLAMs in NGDLC remote terminals within a distance of 16 kilofeet from the central office until the competitive deployment of DSL is achieved through that remote terminal.[356]

Finally, it is also worth noting that the typical ILEC practice—once fiber is installed—is to re-use the existing copper in the feeder plant to serve customers between the central office and the remote terminal.[357] Consequently, the "old" copper loop to a customer beyond the remote terminal no longer exists: the distribution portion (half the copper loop) of the loop is now used to connect the customer to the remote terminal, which in turn is connected by the fiber to the central office. The copper feeder portion of the loop is recycled to another customer closer to the central office. Thus, the copper loop no longer exists as the loop was, but the copper is still in the ground. Because of this reality, SBC will be able to keep its commitment to leave copper in the ground, while still refusing to provide CLECs with a copper loop.[358]

4. Facilities-Based CLECs Must Have Nondiscriminatory Access to Packet Switching

The deployment of NGDLC requires that the Commission expand on its rules governing ILEC DSLAM unbundling obligations. Specifically, as discussed above, the Commission should

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[354] Joint Declaration ¶ 120.

[355] Joint Declaration ¶¶ 121-124.

[356] Joint Declaration ¶ 125.

[357] Joint Declaration ¶ 127.

expressly clarify that the term "packet switching" does not include the underlying fiber transmission facilities between the DLC and the central office. In addition, the Commission should conclude that if a CLEC cannot place the same kind DSLAM equipment in the remote terminal as the ILEC or its affiliate, including traditional DSLAM or Line Cards, the unbundling obligation attaches.

In the *UNE Remand Order*, the Commission determined that when ILECs have deployed DLC systems in remote terminals, other providers of DSL service may be "effectively precluded" from competing without unbundled packet switching.[359] Therefore, the Commission required that "packet switching" be treated as an unbundled network element if an ILEC provides service through a DSLAM at a remote terminal and a facilities-based CLEC cannot provide DSL service by collocating its equipment at the remote terminal or obtaining suitable copper loops.[360] In the NGDLC loop architecture, these circumstances will frequently obtain.

ILECs will deploy some form of "packet switching" for their own use, or the use of their affiliates, in every remote terminal in the NGDLC loop network. Every ILEC has deployed NGDLC in its network and some, such as SBC and Verizon, have announced extensive, aggressive deployment of this technology over the next few years.[361] To ensure that the nondiscrimination requirements of 251(c)(6) are met, the Commission should conclude that where an ILEC deploys either DSL line cards or traditional DSLAMs in a remote terminal facilities-based CLECs must be able to access unbundle packet-switching at their central office

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[358] Joint Declaration ¶ 127.

[359] *UNE Remand Order* ¶¶ 304, 313.

[360] 47 C.F.R. § 51.317(c)(3)(B).

[361] Joint Declaration ¶¶ 51-54.

based collocation arrangements, if the CLEC cannot place their own line cards or tradition DSL equipment in that remote terminal.

As discussed at length in these comments, CLECs ability to collocate at the remote terminal—absent the ability deploy their own DSL line cards—is very unlikely. Thus, at the same time ILECs are ubiquitously deploying NGDLC, their policies effectively prohibit or limit CLECs' ability to interconnect at the remote terminals efficiently and effectively. First, there is insufficient space in the remote terminal. As explained in III.D., remote terminals being constructed in the NGDLC loop network are "shrink-wrapped", meaning they were designed to be only large enough to accommodate the equipment of the ILECs and their affiliates. SBC, for example, has informed the Commission that there is "little or no excess space" in cabinets that constitute a significant portion of its remote terminals across a 13-state region.[362] For this reason, the space in a remote terminal to collocate an entire DSLAM, even the "pizza-box" DSLAMs is limited, if not non-existent.

Second, CLECs ability to use adjacent collocation does not permit them to collocate their equipment *at* the remote terminal. As described above, it only permits them to build their own facilities and interconnect at the remote terminal. Third, ILECs have also consistently rejected Rhythms request to place NGDLC line cards in the DLC chassis in remote.[363] Finally, as described in the previous Section, CLECs are unlikely to be able to find parallel copper suitable for ADSL services is minimal.

Given the limited options available to CLECs and the rapid and expanding deployment of NGDLC in remote terminals, it is clear that the packet switching UNE will be a vital option in

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[362] *SBC February 15 Letter.* The parties are studying the SBC proposal, and in describing what it purports to offer do not mean to concede that it is an adequate measure that fully meets SBC's unbundling obligations.

the NGDLC loop network. The conditions that trigger the obligation of unbundling packet switching will often be met in the NGDLC architecture. The Commission should, therefore, require ILECs to tariff UNE packet switching offerings, under these limited circumstances described above, so that competitors will have ready access when their requests are denied by the ILECs.

5. CLECs Must Have Nondiscriminatory Access to a Broadband Loop UNE

The final option—but by no means the *only* option—that ILECs must make available in the NGDLC architecture is the is unbundled access to a broadband loop offering. ILECs would be required to make the broadband UNE available whenever a CLEC could not collocate a line card. This is **not** the same as a resale service offering, such as the present SBC Broadband Service. If this were the only option, the resold ILEC services would limit all CLECs to reselling only the type of DSL service to consumers that the incumbent has chosen for its advanced services affiliate to provide. Accordingly, the Commission must explicitly recognize that resold DSL service offerings are not sufficient to meet the ILECs statutory unbundling obligations under Section 251 in the NGDLC environment.

The Commission expressly recognized the importance of facilities-based competition in the furtherance of the 1996 Act. Sections 251 and 252, in particular, were enacted in an effort to direct the ILECs to open the local telecommunications market to a facilities-based competition.[364] It is important because "[o]nly facilities-based competitors can break down the incumbent LEC's bottleneck control over local networks and provide services without having to

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[363] Joint Declaration ¶ 119.

[364] *Local Competition Order* ¶¶ 10-15.